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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,707	11/29/2001	Gordon Kerr	14174ROUS02U	2607
26123	7590	11/17/2005	EXAMINER	
BORDEN LADNER GERVAIS LLP WORLD EXCHANGE PLAZA 100 QUEEN STREET SUITE 1100 OTTAWA, ON K1P 1J9 CANADA			PHILPOTT, JUSTIN M	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/995,707

Applicant(s)

KERR ET AL.

Examiner

Justin M. Philpott

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20050713.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 8 and 30 are objected to because of the following informalities: the phrase “the consumer attribute comprises the consumer” is unclear since it does not appear possible for an “attribute” to *comprise* a physical “consumer”. Applicant is suggested to amend the claims as follows: “the consumer attribute comprises an indication of the consumer”. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-15 and 19-36 are rejected under 35 U.S.C. 102(e) as being U.S. Patent No. 6,606,666 by Bell, Jr. et al.

Regarding claim 1, Bell teaches a stream switch fabric comprising: at least one stream queue (e.g., buffers 14a-14c, global control unit 56, and consumer buffer, see FIGS. 1-4 and col. 5, lines 31-40) that operates to receive and store a plurality of properly ordered substreams of a data stream (e.g., see col. 2, line 65 – col. 3, line 42 regarding packets of an information flow, inherently comprising proper order in accordance with clock ticks) from a producer (e.g.,

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producer 12) of the data stream; and a stream queue controller (e.g., control unit 18/32/36), coupled to the at least one stream queue (e.g., buffer 14), that operates to control outputting of at least a portion of the data within the at least one stream queue (e.g., buffer 14) to a consumer (e.g., consumer 16) of the stream queue (e.g., see col. 3, line 43 – col. 4, line 59).

Regarding claim 2, Bell teaches triggering forwarding (e.g., via GRANT/HOLD from control unit 36, see FIG. 2 and col. 4, line 45 – col. 6, line 18) of a copy of at least a portion of the data within the stream queue (e.g., buffer 14) to a consumer (e.g., consumer 16) of the stream queue (e.g., buffer 14).

Regarding claim 3, Bell teaches triggering forwarding (e.g., via GRANT/HOLD from control unit 36, see FIG. 2 and col. 4, line 45 – col. 6, line 18) of a copy of at least a portion of the data within the stream queue (e.g., buffer 14) to a consumer (e.g., consumer 16) of the stream queue (e.g., buffer 14) and deleting of this portion of the data within the stream queue (e.g., buffer 14) (e.g., see col. 5, lines 1-5 and col. 7, lines 4-27 regarding sending packets in buffer 14 to consumer 16, inherently comprising deleting the portion from buffer 14 comprising limited capacity).

Regarding claim 4, Bell teaches reading a consumer attribute for the stream queue to determine an assigned consumer of the stream queue and triggering outputting of a portion of the data within the stream queue to the assigned consumer (e.g., see col. 4, line 45 – col. 5, line 13 regarding attributes of consumer 16 being made known to control unit 18 and factored into grant/hold signal).

Regarding claim 5, Bell teaches selecting a consumer as a consumer for the stream queue based upon a predetermined criteria (e.g., bandwidth criteria) and triggering outputting of a

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portion of the data within the stream queue to the selected consumer (e.g., see col. 4, line 45 – col. 5, line 13 and col. 8, line 38 – col. 9, line 8 regarding selection based upon bandwidth).

Regarding claim 6, Bell teaches the stream queue controller (e.g., control unit 18/32/36) further operates to receive a control signal (e.g., signal 24/34, see FIG. 2) associated with the at least one stream (e.g., see col. 3, line 43 – col. 20, line 50).

Regarding claim 7, Bell teaches the control signal (e.g., signal 24/34) comprises an indication of at least one consumer attribute (e.g., flow rate, capacity, or consumer output indication) for the at least one stream queue (e.g., buffer 14) (e.g., see col. 4, lines 45-59 regarding consumer output indication 34 and col. 5, lines 31-40 regarding control unit 32 managing flow based upon received signaling comprising flow rate and capacity of consumer buffer 16).

Regarding claim 8, Bell teaches the consumer attribute comprises the consumer that is assigned as the consumer of the stream queue (e.g., see col. 4, lines 45-59 regarding consumer output indication 34, inherently comprising the consumer).

Regarding claim 9, Bell teaches the consumer attribute comprises the number of bytes of the data within the stream queue that are to be output to the consumer of the stream queue (e.g., see col. 4, lines 45-59 regarding consumer output indication 34, indicating the number of packets output from consumer buffer, inherently comprising the number of bytes to be output to consumer).

Regarding claim 10, Bell teaches the control signal (e.g., signal 24/34) comprises an instruction to trigger copying of at least a portion of the data within the stream queue (e.g., buffer 14) to the consumer (e.g., consumer 16) of the stream queue (e.g., see col. 4, lines 45-59

regarding consumer output indication 34, indicating the number of packets output from consumer buffer, inherently indicating availability to trigger copying of data stored in buffer 14).

Regarding claim 11, Bell teaches the control signal (e.g., signal 24/34) comprises an instruction to trigger forwarding of at least a portion of the data within the stream queue (e.g., buffer 14) to the consumer (e.g., consumer 16) of the stream queue and deleting of this portion of the data within the stream queue (e.g., see col. 5, lines 1-5 and col. 7, lines 4-27 regarding sending packets in buffer 14 to consumer 16, inherently comprising deleting the portion from buffer 14 comprising limited capacity).

Regarding claim 12, Bell teaches a plurality of stream queues (e.g., buffers 14a-14c and consumer buffer, see FIG. 3 and col. 5, lines 31-40) and the control signal (e.g., signal 24/34) comprises an instruction (e.g., see col. 4, lines 45-59 regarding consumer output indication 34, inherently indicating availability to trigger copying of data stored in buffer 14 to consumer buffer at consumer 16) to trigger transferring of at least a portion of the data within the stream queue (e.g., buffer 14) to a second stream queue (e.g., consumer buffer, see col. 5, lines 31-40).

Regarding claim 13, Bell teaches the at least one stream queue comprises a plurality of stream queues (e.g., buffers 14a-14c, global control unit 56, and consumer buffer, see FIG. 3 and col. 5, lines 31-40) and the plurality of stream queues are hierarchical (e.g., see FIGS. 1-4 regarding hierarchy between 14 and 16).

Regarding claim 14, Bell teaches the at least one stream queue (e.g., global control unit 56) comprises at least one register (e.g., see col. 9, lines 15-19 regarding configuration register).

Regarding claim 15, Bell teaches the at least one stream queue comprises at least one buffer (e.g., buffer 14).

Regarding claim 19, Bell teaches a stream switch fabric comprising: reception means (e.g., via buffers 14a-14c, global control unit 56, and consumer buffer, see FIGS. 1-4 and col. 5, lines 31-40) for receiving a plurality of properly ordered substreams of a data stream (e.g., see col. 2, line 65 – col. 3, line 42 regarding packets of an information flow, inherently comprising proper order in accordance with clock ticks) from a producer (e.g., producer 12) of the data stream; storage means (e.g., via buffers 14a-14c, global control unit 56, and consumer buffer) for storing substreams; and control means (e.g., via control unit 18/32/36) for controlling outputting of at least a portion of the data within the means for storing the substreams to a consumer (e.g., consumer 16) of the stream queue (e.g., see col. 3, line 43 – col. 4, line 59).

Regarding claim 20, Bell teaches the control means comprises copy means (e.g., via GRANT/HOLD from control unit 36, see FIG. 2 and col. 4, line 45 – col. 6, line 18) for copying at least a portion of the data within the means for storing the substreams (e.g., buffer 14) to a consumer (e.g., consumer 16) of the stream queue (e.g., buffer 14) and means for forwarding the copy (e.g., via sending packets to consumer, see col. 5, lines 1-5) of the at least a portion of data.

Regarding claim 21, Bell teaches a stream switch fabric comprising: receiving (e.g., via buffers 14a-14c, global control unit 56, and consumer buffer, see FIGS. 1-4 and col. 5, lines 31-40) a plurality of properly ordered substreams of a data stream (e.g., see col. 2, line 65 – col. 3, line 42 regarding packets of an information flow, inherently comprising proper order in accordance with clock ticks); storing the substreams (e.g., via buffers 14a-14c, global control unit 56, and consumer buffer) within a stream queue associated with the data streams; and outputting (e.g., via control unit 18/32/36) at least a portion of the data within the stream queue to a consumer (e.g., consumer 16) of the stream queue (e.g., see col. 3, line 43 – col. 4, line 59).

Regarding claim 22, Bell teaches the outputting at least a portion of the data within the stream queue to a consumer of the stream queue comprises forwarding (e.g., sending packets to consumer 16, see col. 5, lines 1-5) a copy of at least a portion of the data within the stream queue to a consumer (e.g., consumer 16) of the stream queue (e.g., see col. 4, line 45 – col. 6, line 18).

Regarding claim 23, Bell teaches forwarding (e.g., via GRANT/HOLD from control unit 36, see FIG. 2 and col. 4, line 45 – col. 6, line 18) at least a portion of the data within the stream queue (e.g., buffer 14) to a consumer (e.g., consumer 16) of the stream queue (e.g., buffer 14) and deleting of this portion of the data within the stream queue (e.g., buffer 14) (e.g., see col. 5, lines 1-5 and col. 7, lines 4-27 regarding sending packets in buffer 14 to consumer 16, inherently comprising deleting the portion from buffer 14 comprising limited capacity).

Regarding claim 24, Bell teaches reading a consumer attribute for the stream queue to determine an assigned consumer of the stream queue and outputting a portion of the data within the stream queue to the assigned consumer (e.g., see col. 4, line 45 – col. 5, line 13 regarding attributes of consumer 16 being made known to control unit 18 and factored into grant/hold signal).

Regarding claim 25, Bell teaches selecting a consumer as a consumer for the stream queue based upon a predetermined criteria (e.g., bandwidth criteria) and outputting a portion of the data within the stream queue to the selected consumer (e.g., see col. 4, line 45 – col. 5, line 13 and col. 8, line 38 – col. 9, line 8 regarding selection based upon bandwidth).

Regarding claim 26, Bell teaches the predetermined criteria comprises a round robin system (e.g., see col. 8, lines 38-61 regarding round robin).

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Regarding claim 27, Bell teaches the predetermined criteria comprises a determination of a least burdened consumer (e.g., see col. 8, line 62 – col. 9, line 8).

Regarding claim 28, Bell teaches receiving a control signal (e.g., signal 24/34, see FIG. 2) associated with the stream queue from the consumer of the stream queue (e.g., see col. 3, line 43 – col. 20, line 50).

Regarding claim 29, Bell teaches the control signal (e.g., signal 24/34) comprises an indication of at least one consumer attribute (e.g., flow rate, capacity, or consumer output indication) for the at least one stream queue (e.g., buffer 14) (e.g., see col. 4, lines 45-59 regarding consumer output indication 34 and col. 5, lines 31-40 regarding control unit 32 managing flow based upon received signaling comprising flow rate and capacity of consumer buffer 16).

Regarding claim 30, Bell teaches the consumer attribute comprises the consumer that is assigned as the consumer of the stream queue (e.g., see col. 4, lines 45-59 regarding consumer output indication 34, inherently comprising the consumer).

Regarding claim 31, Bell teaches the consumer attribute comprises the number of bytes of the data within the stream queue that are to be output to the consumer of the stream queue (e.g., see col. 4, lines 45-59 regarding consumer output indication 34, indicating the number of packets output from consumer buffer, inherently comprising the number of bytes to be output to consumer).

Regarding claim 32, Bell teaches the control signal (e.g., signal 24/34) comprises an instruction to copy at least a portion of the data within the stream queue (e.g., buffer 14) to the consumer (e.g., consumer 16) of the stream queue (e.g., see col. 4, lines 45-59 regarding

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consumer output indication 34, indicating the number of packets output from consumer buffer, inherently indicating availability to trigger copying of data stored in buffer 14).

Regarding claim 33, Bell teaches the control signal (e.g., signal 24/34) comprises an instruction to forward at least a portion of the data within the stream queue (e.g., buffer 14) to the consumer (e.g., consumer 16) of the stream queue and delete this portion of the data within the stream queue (e.g., see col. 5, lines 1-5 and col. 7, lines 4-27 regarding sending packets in buffer 14 to consumer 16, inherently comprising deleting the portion from buffer 14 comprising limited capacity).

Regarding claim 34, Bell teaches the control signal (e.g., signal 24/34) comprises an instruction (e.g., see col. 4, lines 45-59 regarding consumer output indication 34, inherently indicating availability to trigger copying of data stored in buffer 14 to consumer buffer at consumer 16) to transfer at least a portion of the data within the stream queue (e.g., buffer 14) to another stream queue (e.g., consumer buffer, see col. 5, lines 31-40).

Regarding claim 35, Bell teaches the predetermined criteria comprises a round robin system (e.g., see col. 8, lines 38-61 regarding round robin).

Regarding claim 36, Bell teaches the predetermined criteria comprises a determination of a least burdened consumer (e.g., see col. 8, line 62 – col. 9, line 8).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bell.

Regarding claims 16-18, Bell teaches stream switch fabric discussed above regarding claim 1, however, may not specifically teach the stream queue controller (e.g., control unit 18/32/36) comprises at least one application specific integrated circuit, at least one reduced instruction set processor, or at least one complex instruction set computer processor. However, Bell also teaches that the invention may utilize an application specific integrated circuit (e.g., see col. 9, lines 29-33 regarding the use of an application specific integrated circuit for an exemplary embodiment of the invention) and further teaches that the invention may be implemented with any other logic hardware, program product hardware, software or any known combination thereof (and see col. 20, line 62 – col. 21, line 19). Further, Examiner takes official notice that application specific integrated circuits, reduced instruction set processors and complex instruction set computer processors are well known program product hardware in the art for implementing operations in a stream switch fabric. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to implement the stream queue controller of Bell with an application specific integrated circuit, reduced instruction set processor or complex instruction set computer processors since these elements are well known in the art for implementing operations in a stream switch fabric and since Bell specifically discloses utilizing an application specific integrated circuit and also specifically discloses the invention may be implemented with any other logic hardware, program product hardware, software or any known combination thereof.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-36 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 30-39 of copending Application No.

09/995,697. Although the conflicting claims are not identical, they are not patentably distinct from each other because each recites either a stream switch or a method which is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim.

8. Specifically, claims 1-20 of the instant application each recite a stream switch fabric comprising a stream queue for storing streams of data and a stream queue controller for outputting the data (e.g., see claim 1). Similarly, claims 21-34 of the instant application each recite a method for performing the steps of the above-mentioned fabric. Claims 30-39 of Application No. 09/995,697 also recite a stream switch fabric (e.g., claim 30, lines 1 and 10)

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comprising a stream queue (e.g., claim 30, line 12) for storing streams of data (e.g., claim 30, line 11) and a stream queue controller (e.g., “content processing element”, claim 30, line 13) for outputting the data (e.g., claim 30, lines 13-20). Thus, the conflicting claims are not patentably distinct from each other because each recites either a stream switch (e.g., claims 1-20) or a method (e.g., claims 21-34) which is not patentably distinct from the reference claim(s) (e.g., claims 30-39) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Nos. 5,745,645 to Nakamura et al. and 5,933,603 to Vahalia et al. disclose data stream switching; additionally, U.S. Patent Application Publication No. US 2002/0087709 A1 by Kerr et al., applicant of the instant application, discloses and claims similar subject matter.

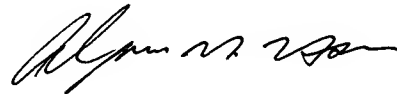
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M. Philpott whose telephone number is 571.272.3162. The examiner can normally be reached on M-F, 9:00am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on 571.272.3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Justin M Philpott



ALPUS H. HSU
PRIMARY EXAMINER